



# National Environmental Satellite, Data, and Information Service

## The Nation's operational weather satellite and information service.

NOAA's National Environmental Satellite, Data, and Information Service (NESDIS) collects observations of the atmosphere, oceans, and the sun to support NOAA's four mission goals of weather ready nation, climate adaptation, resilient coastal communities, and healthy oceans. NESDIS satellite observations are a key input to NOAA's National Weather Service, enabling timely and accurate weather forecasts, as well as watches and warnings used by Federal, State, and local officials, and the general public, to make decisions to safeguard lives, property and critical infrastructure in advance of severe weather.

NESDIS develops and operates Geostationary Operational Environmental Satellites (GOES) for short-range warning and forecasting, and Polar-orbiting Operational Environmental Satellites (POES) for longer term forecasting. NESDIS also leverages data from satellites flown by the National Aeronautics Space Administration (NASA), Department of Defense (DoD), and international space agencies. NESDIS analyzes the most cost-effective means of obtaining satellite data, including purchasing data from commercial sources. NESDIS acquires its satellites through NASA's Goddard Space Flight Center, a long-standing and successful interagency partnership. NESDIS has managed operational POES satellites since 1966. Additionally, NESDIS has managed operational GOES satellites since 1974. A new generation of satellites is being developed to succeed POES and GOES.

NESDIS operates three environmental data centers that house the world's largest archive of climatic, oceanographic, and geophysical data from both satellite and *in situ* sources, ensuring these data remain fully available to Federal, state, and local governments, the private sector, academia, and the public. Data from this archive are used to develop numerous assessments that support NOAA's mission goals.

### Foundational Data That Support NOAA's Mission

NESDIS provides foundational data that are used by NOAA's Line Offices and their programs. Select examples include:

- **National Ocean Service** utilizes data from satellites and the National Data Centers to monitor ocean and coastal phenomena, such as coral reefs and harmful algal blooms, that affect commercial and recreational activities in America's ocean and coastal areas.
- **Oceanic and Atmospheric Research** uses data from NESDIS satellites and monitoring stations to conduct research and modeling relating to environmental trends as diverse as drought, stratospheric ozone, air quality from wildland fires, and seasonal climate events.

- **National Weather Service** uses satellite data in its numerical weather prediction models to develop medium and long term forecasts, 3 days and beyond. In addition, NESDIS obtains data from NASA earth science satellites and European weather satellites for use in NWS models. Data from the Suomi National Polar-orbiting Partnership (Suomi NPP) satellite are providing significant enhancements to numerical weather prediction models. NESDIS also provides data to support operational space weather warning and forecasts. GOES satellites provide instantaneous images of weather that are routinely used by NWS, commercial weather entities, and the media.
- **National Marine Fisheries Service** uses data from NESDIS satellites and Data Centers to monitor movement of endangered and threatened marine life. Sea surface temperature data from NOAA's satellites are used to monitor the distribution of fishery stocks that are sensitive to water temperature.
- **Office of Marine and Aviation Operations** use data from NOAA satellites to safely operate their ships and aircraft. Data are used by Hurricane Hunter aircraft to determine where specific measurements should be taken in order to provide critical data that the National Hurricane Center needs for its forecast products.

### NOAA Satellites Serve the Nation

- NESDIS satellite observations are a key input to NOAA's NWS, enabling timely and accurate weather forecasts, as well as watches and warnings used by Federal, State, and local officials, and the general public, to make decisions to safeguard lives, property, and critical infrastructure in advance of severe weather.
- Data from NOAA satellites and National Data Centers are used by all Department of Defense services to support their global mission and operational readiness.
- Telecommunications, public utilities and satellite operators use outlooks and warnings from NOAA's Space Weather Prediction Center, to protect electric grids and communications assets from solar flares and geomagnetic storms. NESDIS satellite instruments are the primary input into these outlooks and warnings.
- Since 1982, over 7,000 boaters and aviators in the U.S. (and over 35,000 persons worldwide) have been rescued with the aid of the satellite-assisted search and rescue (SARSAT) program. The U.S. Coast Guard and local rescue coordinators utilize the location capabilities that SARSAT provides to quickly locate and rescue persons in life threatening situations.
- Commercial air traffic is routed using data from NOAA satellites to avoid airspace that may contain volcanic ash.



For more information, please visit:  
[www.noaa.gov](http://www.noaa.gov) and [www.nesdis.noaa.gov](http://www.nesdis.noaa.gov)





# FY 2015 Budget Request Highlights

The FY 2015 President's Budget request for NESDIS is \$2,247,926,000. This includes a proposed Program, Project, and Activity (PPA) restructure that would provide NESDIS with the ability to improve management of its programs. The program changes noted below are with respect to the FY 2015 Base (= FY 2014 Enacted + Inflationary Adjustments). Highlights include:

## *Mission Critical Infrastructure*

- **Satellite and Product Operations (\$92.8M)** will support command and control of NOAA's current satellites, NOAA's contribution to the interagency National Ice Center, and SARSAT Mission Control Center. These funds will support 24x7 data processing and distribution of products that are used by the NWS and its forecast offices nation-wide.
- **Product Development, Readiness & Application (\$26M)** will support operations-oriented research that provides constant quality assurance of satellite data and its products; applications-focused research that will develop and evaluate prototype products, algorithms, and pre-operational products to improve existing operational satellite products; and services using data from current and next generation environmental satellites. Work performed enhances the accuracy of current satellite products and develops new satellite products to meet user requirements. Activities range from planning new satellite instruments to developing new satellite products and applications. This includes transitioning new satellite products to operations, improving satellite products as instruments degrade, and performing calibration/validation activities between instruments.
- **National Environmental Information Office (+ \$2M; total request of \$69.1M)** will be the official data management entity for weather, climate, oceanographic, and geophysical information from both U.S. and international sources. NEIO will merge funding for the following: National Climatic Data Center, National Oceanographic Data Center, National Geophysical Data Center, Coastal Data Development, Regional Climate Services, and Environmental Data Systems Modernization. This is a new PPA. The FY 2015 budget request includes funds for NOAA's contribution to the Administration's Big Earth Data initiative which will support efforts to increase the accessibility and interoperability of NOAA's high-value environmental observations.
- **GOES-R Series Program (+ \$38.9M, total request of \$980.8M)** will support continued space and ground development in preparation for launch of the first satellite, GOES-R, in FY 2016, GOES-S in FY 2017, and continued development of GOES-T and GOES-U. FY 2015 funds are required to maintain current development schedules.
- **Jason-3 (+ \$7.2M; total request of \$25.7M)** is the United States' contribution to a 50:50 joint United States-European program to continue this important satellite oceanographic mission used for climate measurements and monitoring hurricane intensity. U.S. Navy is a key user of these data.
- **JPSS Program (+ \$95.4M; total request of \$916.3M)** will support continued development of a weather-focused program which will provide data continuity for NWS numerical weather prediction models after NOAA POES and Suomi NPP satellites. JPSS-1 is scheduled for launch in FY 2017, and JPSS-2 by the 1<sup>st</sup> quarter of FY 2022. FY 2015 funds are required to maintain current development schedules for JPSS-1 and JPSS-2 satellite missions. Additionally, these funds enable JPSS to pursue the procurement of ATMS and CrIS spares to reduce the risk to the JPSS-2 schedule.
- **Solar Irradiance, Data and Rescue (SIDAR; + \$15M)** formerly known as the Polar Free Flyer Program. FY 2015 funds will support the accommodation and launch of the already purchased and built Total Spectral and Solar Irradiance Sensor (TSIS). TSIS will provide measurements of the variability in the Sun's total output and contribute to maintaining the accuracy of the TSI climate data record. The SIDAR project will also provide continued support of two international partnerships: satellite-assisted search and rescue via the Search and Rescue Satellite Aided Tracking system (SARSAT) and environmental data collection and relay via the Advanced Data Collection System (A-DCS). Both SARSAT and A-DCS are being provided by French and Canadian partners.

## *Scientific and Programmatic Innovation*

- **Satellite Ground Services (+ \$2.9M; total request of \$52.7M)** will plan, acquire, develop, integrate, transition to operations, and sustain common ground services for NOAA's environmental systems. SGS will merge funding for the following former PPAs: Earth Observation Systems (EOS) and Advanced Polar Data Processing, Distribution and Archiving Systems; Critical Infrastructure Protection (CIP) - Single Point of Failure; Comprehensive Large Array Data Stewardship System (CLASS); NPOESS Preparatory Data Exploitation (NDE); and the Enterprise Ground System, as well as portions of other major satellite acquisition programs (legacy systems: GOES-N and POES, and next generation systems: GOES-R and JPSS). This is a new PPA.
- **COSMIC-2 / Global Navigation Satellite System Radio Occultation (GNSS RO) Ground System (+ \$4.8M; total request of \$6.8M)** will support the continued development of a ground reception and processing capability of data for National Weather Service use for weather forecasting from GNSS RO satellites provided by joint COSMIC-2 mission between Taiwan and the U.S. Air Force. There are two scheduled COSMIC-2 launches in FY 2016 and FY 2018, respectively. The ground system will also have the capability of ingesting GNSS RO data from foreign satellites and from commercial satellites.
- **System Architecture and Advanced Planning (\$4.6M)** will provide enterprise-level system architecture, advanced system and technology planning, management and technology policies and procedures; and system validation, assurance, and adjudication to ensure the comprehensive solutions meet the mission objective. This is a new PPA.
- **Projects, Planning, and Analysis (\$33.5M)** will provide a project management foci for opportunities for flight projects data exploitation (foreign and/or domestic data) and execution of domestic, international, and commercial partnerships in order to meet NOAA observation requirements. OPPA will assume the responsibilities, with modifications, of the previous Office of Systems Development (OSD). This is a new PPA.

# NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION

For more information, please visit: <http://www.noaa.gov/budget>